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The peer relations of pupils with special educational needs in mainstream primary schools: The importance of meaningful contact and interaction with peers.

Running head: peer relations and special educational needs

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Abstract:

Background and aims: Children with special educational needs (SEN) are generally less accepted by peers in school and have fewer friendships than those without SEN. However, little research has examined peer relations across multiple dimensions, relative to severity of need and in relation to classroom experiences and individual behavioural characteristics. This unique study aimed to extend understanding of the peer relations of pupils with differing levels of SEN support relative to children of differing attainment levels without a formally recognised SEN and in relation to levels of social contact in class and teacher ratings of behaviour.

Sample: Three hundred and seventy-five 9-11-year-old children recruited from 13 classes in 4 mainstream primary schools in the south of England. Fifty-nine pupils had been identified as having a SEN, of which 17 had a statement of SEN.

Method: Pupil sociometric questionnaires provided a range of peer relations measures and the extent of meaningful contact with peers. Pupil behaviour was rated by teachers using the Pupil Behaviour Rating scales. Analyses examined differences in peer relations measures, pupil behaviour and meaningful contact across different levels of educational need.

Results: Compared to pupils without SEN, pupils with a statement of SEN had lower levels of peer acceptance, fewer reciprocated friendships, and were less integrated into peer groups. Whilst internalising behaviours, such as social anxiousness and anxiety, and externalising behaviours, such as aggression and hyperactivity, were related to peer relations measures, frequency of meaningful contact with peers was more predictive of peer relations measures than either SEN status or behaviour.

Conclusion: Findings point to the crucial role of meaningful social contact in the classroom for children's relationships with peers. The study advances understanding by highlighting that greater opportunity for meaningful social contact may improve social involvement of, as well as enhance academic outcomes for, pupils with SEN educated in mainstream schools.

Keywords:

peer relationships, pupils with special educational needs, sociometric methods, socio-cognitive mapping, inclusion

Introduction

Much research indicates that pupils with special educational needs (PSEN) educated in mainstream schools have a lower social status in the classroom than their peers (Chatzitheochari et al., 2015; Ochoa & Olivarez, 1995; Ruijs & Peetsma, 2009). PSEN tend to score lower on measures of social acceptance, and higher on measures of social rejection than their classmates (Frederickson, 2010; Nowicki, 2003; Wiener, 2004), are less likely to have friends (Avramidis, 2013; Koster, Pijl, Nakken & Van Houten, 2010) and are more likely to be bullied or victimised (Chatzitheochari et al., 2015).

This evidence calls into question the effectiveness of the implementation of the policy of 'inclusion' (Armstrong, 2017; Norwich, 2014) adopted by the UK and the 92 signatories of the Salamanca Agreement (DfE, 2014; UNESCO, 1994). It also supports Baroness Warnock's fears (summarised by Terzi, 2011), that PSEN 'were physically included in, but essentially emotionally excluded from a common project of learning' (p4). It is also concerning because other research indicates that peer rejection and friendlessness in childhood are related to school adjustment problems, disengagement and lack of academic progress (Buhs, Ladd & Herald, 2006; Lubbers, Van der Werf, Snijders, Creemers & Kuyper, 2006) and psycho-social difficulties (Bagwell & Schmidt, 2011; Ladd, Herald & Reiser, 2008).

Yet research thus far has largely investigated only the role of single dimensions, and rarely focused on aspects of classroom context, which may support children's capacity to be socially successful. The current study seeks to address these issues by considering the connections between a range of within-child and within-classroom related factors.

Peer relations measures beyond peer acceptance

Research on the peer relations of PSEN has largely focused on sociometric measures of status, peer acceptance and rejection (Ladd, 2005). These measures reflect the consensus attitude of peers towards the individual. Although important, there is a need to consider other aspects of peer relations to better understand the social involvement of PSEN. Dimensions which represent different types and levels of social involvement, such as friendships and peer group membership and involvement, are also crucial with additional implications for adjustment to school, feelings of school belonging, and future psycho-social adjustment (Bagwell & Schmidt, 2011; de Boer, Pijl, Post & Minnaert, 2013; Frederickson & Petrides, 2013; Hamm & Faircloth, 2005; Kindermann & Skinner, 2012; Schwartz et al., 2008). For instance, children with friends are less likely to suffer from internalising problems and loneliness, but only if they are not rejected by the peer group (Hoza, Molina, Bukowski & Sippola, 1995).

Friendships are important contexts for socialisation and development (Hartup, 1996) since they provide opportunities for companionship and social, cognitive and emotional development as friends learn to understand others, manage conflict, jealousy and disappointment in their interactions (Bagwell & Schmidt, 2011; Blatchford, Baines & Pellegrini, 2016). Sustaining friendships indicates a level of social competence beyond acceptance. But, the development of friendship requires opportunities to meaningfully interact through time spent together (Baines & Blatchford, 2009; Holt, Bowlby & Lea, 2017). The primary determinants of friendship are proximity, contact and similarity of interest (Epstein, 1989), yet in circumstances where children spend little time in the classroom it is likely that peers would choose to befriend other peers that are immediately available.

Peer group membership and centrality of involvement are also related to social adjustment, academic engagement and achievement (Kindermann & Gest, 2011). Whilst

friendships are private dyadic relationships, peer groups are more publicly acknowledged and identifiable, arising out of involvement with peers in joint activities within school (Baines & Blatchford, 2009). Importantly, involvement as a core member of a peer group, rather than one on the periphery, may boost feelings of school belonging (Blatchford & Baines, 2010). Some research indicates that PSEN are considered by others as part of groups (Avramidis, 2010), yet little research has examined the social involvement and positioning of PSEN in peer groups and in relation to other peer relations measures.

Avramidis (2013) examined the peer relations, friendships and peer groups of over 500 pupils including 101 PSEN. Findings reflected previous results but also that many PSEN had a friendship and were involved in peer groups. Avramidis concluded that SEN may not be a determining factor for social exclusion or isolation. However, the peer relations constructs used in this study were based on a single measure of friendship nomination rather than distinct measures and nearly two thirds of the sample with SEN had a low severity of need and would not now be considered representative of PSEN.

Contact between children within classes

The policy of inclusion of PSEN in to mainstream schools is based on the notion of contact theory (Allport, 1954; UNESCO, 2015) which emphasises that more positive attitudes and relations towards PSEN and, in turn, greater understanding and acceptance come through interaction that is meaningful and in service of joint goals. Current policy (Casey, 2016) and research evidence further supports this view (Burgess & Platt, 2018). Yet it is often argued that pupils with SEN are *integrated* into school classroom contexts but not fully *included* within them (Terzi, 2011). Although much research has examined the peer relations of pupils with different sub-classifications of SEN and in relation to within-child behaviours, little research has focused on within-class factors as explaining the link between SEN status and peer relations. A unique study of the day-to-day experiences of 48 primary school pupils with a statement of SEN in comparison with 151 average attaining pupils, highlighted the relative isolation of PSEN from their mainstream peers (Webster & Blatchford, 2013). Children with a statement of SEN spent much time outside of the classroom, were nearly half as likely to be observed interacting with peers, and far more likely to be working with the support of a Teaching Assistant (TA). When PSEN were observed working alongside peers, these were usually other PSEN or low attaining pupils and they rarely experienced mixed attainment groups. This relative social isolation of PSEN from their peers was attributed to the enduring presence of a supportive TA. Limited opportunities to engage meaningfully with peers in joint activity in the classroom may explain the general finding that PSEN are less likely to be accepted by their peers (Baines et al., 2015). Classroom organisation and pedagogic decisions may inadvertently or deliberately limit opportunities for meaningful interaction with all peers (Baines et al., 2015; Holt et al., 2017). This suggests that PSEN may be more similar in peer acceptance to pupils who are low attaining than middle or higher attaining peers. It also suggests that friendships are likely to be forged with other PSEN or low attaining pupils.

Level of support need

Studies examining peer acceptance of PSEN typically focus on one sub-type of SEN, e.g., pupils with communication and interaction difficulties (Law, Bates, Feurstein, Mason-Apps & White, 2012), moderate learning difficulties (Frederickson & Furnham, 1998, 2004), autism (Jones &

Frederickson, 2010). Studies indicate variations in the level of acceptance by SEN type, but this variation is relatively small and does not detract from the overall finding that all PSEN experience lower peer status than their mainstream peers (Avramidis, 2013; Pijl, Frostad & Flem, 2008).

Few studies have examined connections between severity of need of PSEN and their peer relationships. Those PSEN with greater need may be even less accepted or more actively rejected by peers. In the UK, there is no commonly recognised measure of the severity of need, although one proxy measure might be the level of support provided to a pupil which could be related to need. The SEND Code of Practice (DfE, 2014) specifies two levels of need: SEN support and those with an Education, Health and Care Plan, which replaces what previously was called a Statement of SEN. It is difficult to avoid crude categorisations of particular and general labels of SEN when children often fall into multiple areas of difficulty, when approaches to their identification are controversial (Dockrell & Hurry, forthcoming) and when the education system uses such broad descriptors (see Norwich, 2014). Nevertheless, those children with high support needs are often accompanied by a TA, taken out of class for one-to-one intervention and are less likely to experience opportunities for meaningful social contact with peers than PSEN with lower support provision. This in turn may relate to their peer relations.

Peer relations are also connected to within-child factors. Externalising behaviours, such as aggression, disruptiveness, and prosociability predict peer acceptance (Bakopoulou & Dockrell, 2016; Calder, Hill & Pellicano, 2013; Jones & Frederickson, 2010; Siperstein, Leffert & Widdaman, 1996). Other studies examining the relationship between social status and pupil behaviour suggest that a relatively narrow range of behaviours have received much attention (e.g. Asher & McDonald, 2011), principally aggression, being withdrawn and prosociability. Other behaviours and emotions such as hyperactivity, dominance, and social anxiety, which have been examined in studies of school children in classroom contexts (Blatchford, 2003), have largely been ignored in research and might also be implicated in the connection between SEN and peer relations. Yet, the extent to which within-child factors are main predictors of peer relations or whether meaningful social contact with peers within class play a greater role is unclear.

This study

This cross-sectional study had four main aims. First, it aimed to examine the nature of the peer relations of PSEN at two levels of need and how they differ from those of pupils without SEN and from low attaining children. To this end, key measures of peer relations examined were peer acceptance and rejection, reciprocal and unilateral friendships, and membership of and centrality within peer groups. A second aim was to examine the extent to which peer relations may be related to within-child factors, such as level of SEN support need, internalising and externalising behaviours, prosocial and asocial behaviours. Third, the study aimed to examine the interconnection between meaningful social contact with peers in the classroom, measures of peer relations, and attitudes towards working with peers. The final aim of this study was to examine the extent to which within-child behavioural measures and meaningful peer contact, best predict different measures of peer relations of children over and above their SEN status.

Method

Participants

Pupils in thirteen Year 5 and 6 classes (ages 9-11 years) in four mainstream primary schools took part in this research. Of the 375 participants, just over half were girls (54%) and nearly two thirds

(63%) were in Year 5. Of the 59 PSEN, 42 were at the level of SEN support (DfE, 2014), a further 17 had a statement of SEN. The label of SEN is controversial in the UK (Norwich, 2014) and is often used to refer to children with a wide range of different needs. At the time of this research, England was in the process of a change in SEN policy with new labels and ways of describing different categories of SEN. However, at this point the system was new and schools were still using the old categories and Code of Practice. Pupils with all types of SEN were included in the study, the largest category of SEN pupils was those with a primary need of cognition and learning (29 pupils), followed by communication and interaction (21 pupils), physical and sensory needs (5 pupils), and social, emotional and mental health needs (4 pupils). The remaining 316 pupils were not recorded as having SEN. Permission to undertake this research was received from the University research ethics committee and informed consent for participating in the research was sought from parents and children. Five parents did not want their children to take part. No children opted out of the research.

Research tools

Information on pupils' SEN status and attainment was provided by the participating schools. The combined measure of attainment was based on school records of the most recent performance of children in terms of National Curriculum Testing in English and Mathematics. These measures are based on both formal assessment tests and teacher perceptions of attainment and indicate the level at which children are working according to nationally used criteria.

Sociometric questionnaires

A sociometric roster-based questionnaire based on previous research (Fredrickson & Furnham, 2004) provided measures of peer acceptance and rejection, relative to play and work preferences. It also enabled collection of information on children's unilateral and reciprocal friendships, perceived frequency of working together, peer group membership, size and centrality of peer groups and the centrality of the child within the group.

The pupil sociometric questionnaire was completed in a whole group session in the classroom, overseen by the researcher and with extra adult assistance to help those who needed clarification and support. Pupils were first asked to indicate from a class list printed onto the questionnaire how much they liked to play with and, separately, to work with, every other pupil in the class using three schematic faces (happy, neutral and sad) to indicate degree of liking. Participants were also asked to identify their three closest friends in the class, and how often they worked together with every other pupil in the class on a four-point scale where 4 indicated 'most days', 3 indicated 'at least once a week', 2 indicated 'at least once a term' and 1 indicated 'never'.

To establish peer group membership, pupils were asked 'Are there some children in your class who play together a lot?' They were asked to write down the names of those children that they played with in a group before writing down the names of pupils in other groups.

Teacher ratings of pupil behaviour

The short version of the Pupil Behaviour Rating (PBR) questionnaire as developed and used in previous research (Blatchford, 2003) was used in this study. This provides information relative to eight factors: social exclusion (2 items); prosocial behaviour (2 items); aggression (2 items); dominance (2 items); hyperactivity (4 items); anxiousness (2 items); socially anxious (2 items) and being asocial (2 items). A five-point scale was used where '5' indicated almost always and '1' never, and Cronbach alpha internal consistency estimates of between .65 and .87 indicated moderate to high levels of consistency for each scale.

Class teachers were asked to rate the behaviour of all PSEN and a sub-sample of non-SEN participants that were of the same gender and of low to average attainment. A sub-sample was used as it was impractical to ask the teacher to complete 21 ratings for every pupil in their class. In total 99 PBR questionnaires were completed, 52 for PSEN, and 47 for the comparison group.

Data treatment and analysis

Measures of ‘peer social acceptance’ and ‘work acceptance’ were calculated (following Coie et al., 1982) for each participant by dividing the number of smiling faces they had received by the total number of children minus 1 to provide a measure of the proportion of the class that ‘liked to play with’ or ‘liked to work with’ each child. A similar process was followed for the measures of ‘peer social rejection’ and ‘work-with rejection’ but instead using the number of sad faces that each child had received. The scale for each measure ranged from 0 to 100. The higher the score on these measures the more accepted or rejected a child was considered to be in the peer group.

Three variables were derived from the question asking children to identify their friends. First the number of friend nominations *made*, second, the number of nominations *received* (often referred to as unilateral friendship, and considered another indicator of peer acceptance (Ladd, 2005)), and third, a measure of *reciprocated friendship* – where friends mutually identify each other as friends. Reciprocal friendship is considered to be the most accurate way to identify the existence of a friendship (Blatchford et al., 2016). This also enabled measures of the extent to which a pupil was friends with non-SEN pupils, PSEN support, and pupils with a statement of SEN.

Responses to the question about pupils who played together in groups were analysed using Social Cognitive Map analysis software for the identification of peer groups within a cohort from verbal report data (Leung, 1994). This provides a) the number and size of peer groups in each class, b) the salience of the group (on a scale of 1-4) as defined by the number of times members are identified, and c) the individual position of the pupil within the group (on a scale of 1-4) as indicated by the number of times each pupil is identified as being part of that group. The greater the number of nominations the more salient the group is considered to be, and the more salient or central the individual is considered to be within the group (Kindermann & Gest 2011).

Responses to the question about frequency of working together with individual class members provided a measure of reported ‘meaningful peer contact’ based on the average rating reported by all other pupils in the class. We use the term ‘meaningful’ here to mean interactions that are purposeful and authentic.

Results

Analyses of peer relations measures by SEN status showed a main effect of SEN for all peer relations measures (Table 1). Those children with statements of SEN and those receiving SEN support scored significantly lower, as indicated by post-hoc tests, on measures of social acceptance and work acceptance, and scored higher on measures of social rejection and work rejection.

There were also main effects of SEN status relative to friendships and involvement in peer groups. Pupils with a statement of SEN received fewer friendship nominations, made fewer nomination of others as friends and had fewer reciprocal friends than those children with SEN support and/or those without SEN.

Children with a statement of SEN were involved in peer groups with fewer members, their groups were considered to be less central in the class, and these children were less likely to be centrally involved in these groups than peers with support levels of SEN and children without SEN. While the majority of pupils with statements of SEN were said to belong to a peer group

(70.59%), five isolates (pupils who did not belong to any peer group) were pupils with statements of SEN (29.41% of all statemented pupils). The other three isolates were pupils without SEN (1% of all pupils without SEN).

Children with SEN support and statements of SEN had significantly lower levels of meaningful contact with peers in class, and significantly lower levels of meaningful contact with children without SEN. Only children with statements of SEN were significantly more likely to have higher levels of social contact with other PSEN.

***** Table 1 here

Level of attainment and SEN

Analyses of peer relations measures relative to attainment level showed main effects of attainment for all peer relations measures except for the three friendship measures and peer group size. Significant differences were evident ($p < .05$) between low and average vs high attainers without SEN across these measures. Analyses comparing peer relations measures for the SEN group relative to the low attainers without SEN identified no significant differences between these groups (see Table 2) suggesting that low attainers had more in common with PSEN than with high attaining pupils without SEN, at least as far as peer relations are concerned.

***** Table 2 here

Pupil behaviour and peer relationships

Correlations between measures of pupil behaviour and peer relations were examined for the subsample of pupils (see Table 3). Overall, most of the behavioural measures, except for dominance, were either moderately or weakly related to a number of the peer relations measures. Being perceived by the teacher as prosocial was moderately related to sociometric measures of social acceptance, work acceptance and unilateral friendships and negatively related to social and work rejection. By contrast, teacher perceptions of aggressiveness and hyperactivity were negatively related to social and work acceptance and unilateral friendship, and positively related to social and work rejection. Ratings of internalizing behaviours (socially anxious and anxious) were negatively associated with social acceptance, work acceptance, unilateral friendship, group centrality and individual centrality in a peer group, but not with reciprocated friendship suggesting that pupils displaying these internalising behaviours can have the same number of friends as others. Being rated as asocial was also negatively correlated with acceptance measures but also the number of reciprocated friendships and individual centrality within the group.

***** Table 3 here

There were high correlations between reported meaningful contact and a range of peer relations measures with the exception of peer group size. Highest correlations were found between meaningful contact and social acceptance, social rejection, work acceptance and work rejection suggesting that the greater the social contact between pupils, the higher the levels of acceptance for liking to play and work with a pupil were. Meaningful contact was also moderately correlated with unilateral friendship, group centrality and individual centrality but only weakly with reciprocated friendships.

Friends of children with SEN

To examine whether PSEN form ‘friendships’ with other PSEN and with children from certain attainment levels, we identified the proportion of a child’s friends that were either non-SEN, SEN support or had a statement of SEN and the proportion of non-friends from these groups (Table 4). Findings indicate that friends of pupils with SEN support were no more likely to be other children with SEN support or a statement of SEN. In contrast, 17.4% of those named as friends of pupils with a statement of SEN had a statement of SEN themselves, compared with 3.7% of those not named as friends. Friends of pupils with a statement of SEN were more likely to have a statement of SEN themselves, $\chi^2 = (2, N=375) 12.96, p < .01, \phi_c = .19$. That is, pupils with a statement of SEN were more likely to befriend other children with a statement of SEN.

***** Table 4 here

Predictive value of SEN status, behavioural measures and meaningful contact

To examine the extent to which SEN status, within-child behavioural variables and meaningful peer contact are predictive of the different peer relations measures, a series of hierarchical regression analyses were undertaken for each peer relations variable. In Step 1, SEN status was entered and in Step 2 the main behavioural variables found to be highly correlated with peer relations measures were entered as simultaneous predictors. First, behavioural variables of aggression, hyperactivity, and anxiety, were included in the regression model. A second regression included only variables of prosocial, social anxiety, and asocial. The final regression analyses only included variables that had been significant at the earlier stages. At Step 3 of the final regression analysis, meaningful peer contact was entered. Final regression models are shown in Tables 5 and 6.

Statistically significant models were found for social acceptance and rejection, work acceptance and rejection and unilateral friendship with significant improvement in the variance explained at each step. At Step 1 SEN was a significant predictor for social acceptance and unilateral friendship but was not at Steps 2 or 3. Similarly, while behavioural variables show predictive value at Step 2, this declines at Step 3 when meaningful contact is entered, indicating that greater variance was explained by meaningful peer contact. Similar patterns are evident in relation to the predictors of work acceptance where SEN status loses its predictive value at Steps 2 and 3 and asocial and hyperactive decline in their predictive value, though still remain significant predictors, at Step 3.

In relation to social rejection and work rejection, SEN status is not a significant predictor at any of the steps. The final model indicates that the lower levels of meaningful peer contact pupils have, the more they are likely to be rejected but also that the ratings of asocial continue to be predictive of rejection, indicating the importance of a socially proactive approach to engagement with peers.

Hierarchical regression analyses for reciprocal friendship and individual network centrality were also significant (Table 6) but were much weaker. For reciprocal friendships, first SEN status was not a predictor at any of the Steps and the model at Step 3 did not explain significantly more of the variance compared to Step 2. Asocial and meaningful contact were very weak non-significant predictors at Steps 2 and 3 respectively. Findings for individual group centrality were similar again with the overall model explaining only 15% of the variance and Step 3 not a significant improvement on Step 2. This suggests that more intimate peer relationships as exemplified by friendship and individual group centrality involve different processes and are less a function of meaningful peer contact than peer acceptance and work acceptance.

***** Table 5 here

***** Table 6 here

Discussion

This study examined the peer relations of children with and without SEN and how these might be related to pupil behaviour and meaningful peer contact. This systematic study, based on a large sample, was unique in examining multiple measures of peer relations of children with and without SEN in relation to levels of meaningful peer contact in the classroom and level of support need. Findings are significant in highlighting the importance of meaningful contact in the classroom and level of support need in relation to different peer relations measures.

Results showed differences in relation to SEN status in terms of social and work acceptance and rejection, replicating previous findings that PSEN are less likely to be accepted and more likely to be rejected socially or as a work partner. Crucially, findings extend understanding of peer relations of pupils with different levels of SEN by showing that pupils with statements of SEN have fewer friends, and are less integrated into peer groups, compared with those on SEN support and those without SEN. More than three quarters of children with a statement did not have a reciprocated friendship compared to around a quarter of children with SEN support and without SEN, and their friends were more likely than any other group to be other children with statements of SEN. Furthermore, children with statement of SEN were less likely to be involved in a group. Just over 41% of pupils with a statement of SEN were peripherally involved or not involved at all in a peer group. The finding that children with statements of SEN tended to be involved in smaller and less central groups within the ecology of the classroom, also reinforces the notion that these children exist on the fringes. These findings are deeply concerning and strongly suggest that although pupils with SEN support may be involved with peers and have friends in school, those children with statements of SEN are likely to be on the peripheries of social life in their classrooms.

The reported link between peer rejection and adverse consequences in later life may only apply to those who experience extreme rejection (Ladd, 2005) but the risk for pupils with statements of SEN of reduced mental health and emotional wellbeing, and potential loneliness in the future should be of concern to educational professionals given the strong connections between peer relations measures and disaffection, disengagement and lack of progress in school (Hirschfield & Gasper, 2011; Gallardo, Barrasa & Guevara-Viejo, 2016). We know for instance that a high proportion of young offenders also have a SEN (Bercow, 2008; Bryan, Freer & Furlong, 2007). However, previous research has indicated that PSEN tend to hold positive self-perceptions of their social relationships in school (Holt et al., 2017; Nowicki, 2003) and it may be the case that despite having fewer friends and being less accepted, these children positively value the relationships they have or are unaffected by spending time on the fringes (Calder et al., 2013). Nevertheless, this may be for a minority of pupils and it is likely that less acceptance, greater rejection and lower levels of involvement with friends and peers may mean pupils with a statement of SEN will experience a weaker sense of school belonging as a result (Frederickson & Petrides, 2013).

Pupils with SEN support were also less socially accepted, and more rejected as someone to work with, but findings reveal that they did appear to have friendships with pupils with and without SEN, and were no less likely to be centrally involved in peer groups than peers without SEN. This is a positive finding. Given the interactional basis of friendships and involvement in

peer groups, it may be that the day-to-day social experiences of these children are little different from their peers. Further research should examine the quality of these relationships.

The absence of differences in measures of peer relations between those identified as having SEN and low attaining pupils without SEN, might reflect the oft reported relationship between attainment and measures of peer relations (Blatchford et al., 2016) given that PSEN are often also of low ability. However, these findings may also be related to social experiences in the classroom as PSEN often spend most time alongside low attaining pupils (Webster & Blatchford, 2013) and it may be that both groups are less likely to work with other peers in the classroom. In this regard it was an important finding that low attaining pupils and PSEN had similar profiles for meaningful peer contact.

A unique element of this study was the examination of peer relations measures in relation to SEN support, the behavioural profiles of children, and the extent to which they had meaningful contact with peers in their class. Analyses showed the importance of meaningful peer contact as a better predictor than SEN status and behavioural measures in relation to social and work acceptance and rejection variables and unilateral friendships. These results strongly support the view that SEN status is not a main predictor of peer acceptance and rejection in the classroom (Avramidis, 2013) and that other variables better explain variability in these peer relational variables. Furthermore, behavioural variables explained little variance in peer relations measures, and, once meaningful peer contact was included in the analysis, only the measure of asocial/withdrawn behaviours continued to provide explanatory value in relation to social rejection and work acceptance and rejection. Above all, findings highlight the importance of meaningful peer contact as a main predictor of the acceptance and rejection variables and unilateral friendship.

Given the cross-sectional nature of this study, these results may reflect the possibility that less accepted children are less likely to have contact with peers. However, this ignores the nature of everyday primary classrooms where teachers oversee which children sit and work together. As we know from previous research, SEN and low attaining pupils are often grouped together for targeted direct support (Baines et al., 2003; Webster & Blatchford, 2013). It is highly likely therefore that the peer relations, at least in terms of acceptance and rejection, are related to experiences of meaningful peer contact in the classroom.

The finding that reciprocal friendship and network centrality were weakly associated with peer contact in the classroom suggests that for more personal relationships more complex processes may be at work. However, we also found that the friends of children with a statement of SEN were more likely to be other peers with a statement of SEN suggesting that the commonality of contact that these pupils experience may set the scene for the development of friendships and involvement in peer groups. This warrants further research, ideally of a longitudinal nature, to understand the connections between different aspects of peer relations.

This study had a number of limitations. Greater confidence in the findings could be achieved with a larger sample of schools and detailed information about other dimensions of the classroom and school context. Most measures used in this study were well-established, but the measure of meaningful peer contact is new and its validity may be questioned. Subsequent small-scale research comparing pupil self-report of working together and observed interactions with peers (Spence, 2018) found moderate correlations (approximately $r=.45$) however the explanatory pathway might be as much about 'perceived' contact as it is about 'actual' contact with others in the classroom. It is also important to recognise the correlational nature of this research, that meaningful contact may reflect other more important underlying connections between variables. Future research should examine meaningful contact and other pedagogic practices in class.

Our findings highlight the importance of increasing meaningful contact between PSEN and those without SEN for more positive peer relations in school classrooms. Simply being

integrated in the classroom does not translate into positive relations with peers and purposeful interactions with peers may be important for positive peer relations and for inclusion (Amando, 2004). Much every-day classroom practice focuses on the individual learning needs of children (Blatchford et al., 2016), and reduced meaningful contact between peers appears to be one consequence of providing support to PSEN whether that involves providing a TA or withdrawing pupils with SEN from the class to provide interventions (Webster & Blatchford, 2013). Class teachers could do much more to think about the social and psychological needs of all pupils, including those with SEN. There is a substantial literature on collaborative working which can improve academic outcomes but can be used to support positive social relationships and inclusion (Baines et al., 2015; Kutnick & Blatchford, 2014). We suggest that improving meaningful peer contact in the classroom through collaborative working could improve both academic and social outcomes for PSEN in the way those who argued in favour of including PSEN in mainstream schools originally envisaged.

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Table 1. Sociometric and social contact measures by SEN status with univariate ANOVAs, effect sizes and post-hoc comparisons

		SEN status				F value	η^2
		No SEN (N=316)	SEN support (N=42)	SEN Statement (N=17)	Total (N=375)		
Social acceptance	<i>M</i>	37.47 _a	28.79 _b	27.72 _b	36.05	9.92***	.05
	<i>SD</i>	13.83	17.10	14.30	14.58		
Social Rejection	<i>M</i>	25.21	30.38	32.31	26.11	4.29*	.02
	<i>SD</i>	13.54	14.27	20.14	14.09		
Work Acceptance	<i>M</i>	44.31 _a	31.87 _b	32.42 _b	42.38	14.17***	.07
	<i>SD</i>	16.24	16.42	16.49	16.83		
Work Rejection	<i>M</i>	19.18 _a	26.65 _b	31.14 _b	20.56	11.72***	.06
	<i>SD</i>	12.54	14.98	18.82	13.53		
Reciprocal friendship	<i>M</i>	1.47 _a	1.40 _a	0.41 _b	1.41	8.43***	.04
	<i>SD</i>	1.04	1.06	0.80	1.05		
Unilateral friendship	<i>M</i>	2.82 _a	2.26 _{ab}	1.35 _b	2.69	6.63***	.03
	<i>SD</i>	1.84	1.73	1.46	1.84		
Nominations Made	<i>M</i>	2.74 _a	2.83 _a	1.47 _b	2.69	15.15***	.08
	<i>SD</i>	0.89	1.08	1.51	0.98		
Peer group size	<i>M</i>	7.67 _a	8.24 _a	4.71 _b	7.60	7.39***	.04
	<i>SD</i>	3.25	3.50	3.70	3.36		
Group centrality	<i>M</i>	3.69 _a	3.67 _a	2.76 _b	3.70	14.17***	.07
	<i>SD</i>	0.65	0.65	1.39	0.61		
Individual centrality	<i>M</i>	3.56 _a	3.31 _a	2.59 _b	3.49	16.51***	.08
	<i>SD</i>	0.67	0.75	1.23	0.74		
Meaningful peer contact	<i>M</i>	2.10 _a	1.92 _b	1.85 _b	2.07	10.21***	.05
	<i>SD</i>	.31	.33	.48	0.33		
Meaningful contact with non-SEN pupils	<i>M</i>	2.11 _a	1.89 _b	1.71 _b	2.06	18.70***	.09
	<i>SD</i>	.31	.36	.40	0.34		
Meaningful contact with SEN pupils	<i>M</i>	2.08 _a	2.15 _a	2.73 _b	2.11	5.18***	.03
	<i>SD</i>	.79	.78	1.27	0.83		

Note: *** $p < .001$; ** $p < .01$; * $p < .05$. Mean with a different subscript are significantly different from one another at $p < .05$, on post-hoc Bonferroni comparisons.

Table 2. Peer relationship measures by attainment and SEN status

		Academic status		F value Non-SEN pupils attainment level (low, middle, high)	F value low attainers vs PSEN
		Low attainers (N=35)	SEN (N=59)		
Social acceptance	M	34.84	28.48	6.66**	3.64
	SD	14.49	16.23		
Social Rejection	M	28.05	30.94	6.57**	.72
	SD	15.85	16.02		
Work Acceptance	M	36.35	32.03	28.20***	1.64
	SD	14.84	16.30		
Work Rejection	M	22.81	27.94	10.16***	2.24
	SD	15.97	16.14		
Reciprocal friendship	M	2.49	2.00	.05	.14
	SD	1.60	1.69		
Unilateral friendship	M	2.63	2.44	.95	1.89
	SD	0.91	1.36		
Nominations Made	M	1.46	1.12	1.13	.53
	SD	1.01	1.08		
Peer group size	M	7.80	7.22	.24	.49
	SD	3.84	3.88		
Group centrality	M	3.46	3.41	3.72*	.06
	SD	0.89	1.00		
Individual centrality	M	3.43	3.10	4.52*	3.18
	SD	0.66	0.96		

Notes: *** p<.001; ** p< .01; *p< .05

Table 3. Correlations between Behaviour Ratings and peer relations measures (N=99)

Behaviour rating	Peer Relations Measure								
	Social Acceptance	Social Rejection	Work Accept	Work Reject	Unil. friendship	Recip. friendship	Group size	Group centrality	Individ. centrality
Prosocial	.25**	-.17*	.27**	-.18*	.20*	.17*	.01	.20*	.12
Aggressive	-.32**	.31**	-.33**	.31**	-.22*	-.22*	.03	-.10	-.11
Hyperactive	-.35**	.21*	-.41**	.31**	-.24**	-.12	.12	-.07	-.06
Dominant	.11	-.02	.12	-.02	.15	.04	-.04	.07	.12
Socially anxious	-.24**	.18*	-.29**	.18*	-.39**	-.16	-.14	-.26**	-.29**
Anxious	-.28**	.21*	-.28**	.19*	-.34**	-.16	-.05	-.22*	-.25**
Asocial	-.33**	.38**	-.44**	.41**	-.44**	-.27**	-.02	-.17*	-.32**
Meaningful peer contact	.56**	-.59**	.63**	-.60**	.38**	.23**	.03	.29**	.36**

Notes: ** p< .01; *p< .05

Table 4. Profile of friends of pupils with and without SEN by SEN status and attainment

	SEN classification		
	Non-SEN	SEN support	Statement
Friends of SEN support pupils (<i>N</i> =103)	82.5%	11.7%	5.8%
Not friends of SEN support pupils (<i>N</i> =272)	84.9%	11.0%	4.0%
Friends of statemented pupils (<i>N</i> =23)	60.9%	21.7%	17.4%
Not friends of statemented pupils (<i>N</i> =352)	85.8%	10.5%	3.7%

Table 5. Results of hierarchical regression analyses predicting peer relations measures by SEN status, behaviour ratings and meaningful peer contact

Predictor variables	Social Acceptance			Social Rejection			Work Acceptance			Work Rejection		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
SEN status (1, SEN; 0, NSEN)	-.25*	-.16	-.09	.15	.01	-.05	-.26**	-.05	-.01	.18	.03	-.03
Behaviours												
Aggression		-.24*	-.15		.20*	.12	-	-			.19	.12
Asocial		-.18	-.06		.31**	.19*		-.31**	-.19*		.33**	.23*
Hyperactive		-	-		-	-		-.25*	-.17*		-	-
Meaningful peer contact			.59***			-.53***			.56***			-.49***
R ²	.06*	.18**	.48***	.02	.18**	.43***	.07**	.25***	.53***	.03	.20**	.41***
R ² change	.06	.11**	.30***	.02	.16**	.25***	.07**	.18***	.28***	.03	.17**	.21***

Note. - = not entered; *p<.05; **p<.01; ***p<.001

Table 6. Results of hierarchical regression analyses predicting peer relations measures by SEN status, behaviour ratings and classroom contact

Predictor variables	Unilateral Friendship			Reciprocal Friendship			Individual Centrality		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
SEN status (1, SEN; 0, NSEN)	-.21*	-.01	.04	-.14	-.04	-.02	-.25*	-.14	-.11
Behaviours									
Aggression		-	-		-.14	-.11		-	-
Asocial		-.28*	-.17		-.21 ^{as}	-.16		-.23 ^{as}	-.17
Anxious		-.08	-.16		-	-		-.06	-.09
Socially Anxious		-.18	-.11		-	-		-	-
Meaningful peer contact			.43***			.20 ^{as}			.19 ^{as}
R ²	.04*	.22***	.38***	.02	.10*	.13*	.06*	.12**	.15**
R ² change	.04*	.18***	.16***	.02	.08*	.03	.06*	.06*	.03

Note. as = p<.08; *p<.05; **p<.01; ***p<.001